

REMARKS

This application has been reviewed in light of the final Office Action dated April 2, 2004.

Applicants note that the Office Action did not indicate approval of the Substitute Specification filed on March 16, 2004. Accordingly, Applicants respectfully request such approval from the Examiner.

In view of the foregoing amendments and the following remarks, favorable reconsideration and withdrawal of the rejection set forth in the Office Action are respectfully requested.

Claims 1, 2, 4-6 and 8 are pending. Claims 3 and 7 have been canceled herein, without prejudice or disclaimer of subject matter. Claims 1 and 5 have been amended. Support for these changes can be found in the original disclosure, and therefore no new matter has been added. Claims 1 and 5 are in independent form.

Claims 1-8 were rejected under 35 U.S.C. § 102(b) as being anticipated by Japanese Patent Application Laid-Open No. 6-171089 (*Utsunomiya*). Since Claims 3 and 7 have been cancelled, the rejection of these claims is moot. In response to the rejection of the remaining claims, while not conceding the propriety of that rejection, independent Claims 1 and 5 have been amended. Applicants submit that as amended, independent Claims 1 and 5 are allowable for at least the following reasons.

Independent Claim 1 recites, *inter alia*, a step of, before patterning a mask layer on a first surface of a base material, forming a recessed portion corresponding to an opening in a second surface of the base material by patterning a mask layer on the second surface of the base

material and by effecting etching in the second surface via the mask layer of the second surface, and a step of, after forming the recessed portion, forming nozzle grooves and the opening in the base material for communicating the recessed portion with the nozzle grooves, by patterning the mask layer on the first surface of the base material and by effecting etching in the first surface and the recessed portion via the mask layer of the first surface and the mask layer of the second surface.

These steps of Claim 1 are illustrated in part, for example, in Figs. 3D and 3E. As shown in Fig. 3D, before patterning mask layer 12 on a first surface (lower surface in the drawing), recessed portion 2a is formed in a second surface (upper surface in the drawing) by patterning mask layer 11 on the second surface and etching in the second surface via the mask layer 11. Subsequently, as shown in Fig 3E, after forming the recessed portion 2a, nozzle grooves 3 are formed, by patterning mask layer 12 on the first surface and by effecting etching in the first surface and the recessed portion via mask layer 12 of the first surface and mask layer 11 of the second surface. (Of course, the details of the drawings are not to be taken as limiting the scope of the claims.)

Utsunomiya relates to an ink jet printing head and the manufacture thereof. The ink jet head includes substrate 8, ink supply port 2, nozzles 1, and opening 2' between ink supply port 2 and nozzles 1. The Office Action (page 2) alleges that *Utsunomiya* “teaches both a simultaneous etch (Figure 4) and a process in which the etch process for the nozzles is terminated before the etching of the recessed portion is completed (Figure 3)” (the Office Action also cites paragraphs [0009] - [0013] of *Utsunomiya* in this regard.)

Applicants respectfully disagree with this allegation. According to *Utsunomiya*, “both surfaces of the nozzle substrate 8 [are] subject to an etching treatment simultaneously” (abstract; emphasis added). See also paragraphs [0005], [0007] and [0016] (forming the ink feed hopper connected with all the nozzles “simultaneously” or “at once” by an etching process). Specifically, paragraph [0012] states, with reference to Figure 3, “when an ink [feed] hopper is connected with all nozzles, etching processing is terminated, and the nozzle substrate configuration at the time of not making the ink feed hopper 2 penetrate is shown [in the figure].” Applicants understand that the quoted language indicates that etching is stopped after ink supply port 2 has been connected with all the nozzles 1, at a time when ink supply port 2 has not penetrated element 3 beyond a desired depth, as shown in Figure 3.

Moreover, even if, as alleged by the Office Action, *Utsunomiya* were deemed to teach a process in which the etch process for the nozzles is terminated before the etching of the recessed portion is completed, Applicants note that such teaching is entirely distinct from the above-noted steps of Claim 1. According to those steps, the recessed portion is formed, by patterning and etching the mask layer of the second surface, before patterning or etching the mask layer on the first surface (i.e., the surface of the nozzle member for forming the nozzle grooves, as recited in the second step of Claim 1); only after forming the recessed portion is the mask layer on the first surface patterned and etched. In contrast, according to the teaching that the Office Action imputes to *Utsunomiya*, the nozzle-forming surface is etched before the etching of the recessed portion is completed. Applicants submit that nothing in *Utsunomiya* would teach or suggest a step of, before patterning a mask layer on a first surface of a base material, forming a recessed portion corresponding to an opening in a second surface of the base

material by patterning a mask layer on the second surface of the base material and by effecting etching in the second surface via the mask layer of the second surface, and a step of, after forming the recessed portion, forming nozzle grooves and the opening in the base material for communicating the recessed portion with the nozzle grooves, by patterning the mask layer on the first surface of the base material and by effecting etching in the first surface and the recessed portion via the mask layer of the first surface and the mask layer of the second surface.

Since *Utsunomiya* does not contain all of the elements of independent Claim 1, that claim is believed allowable over the cited art. Since independent Claim 5 recites features similar or identical to those of Claim 1, Claim 5 is believed allowable for at least the same reasons as pertain to Claim 1.

A review of the other art of record has failed to reveal anything which, in Applicants' opinion, would remedy the deficiencies of the art discussed above, as a reference against the independent claims herein. Those claims are therefore believed patentable over the art of record.

The other claims in this application are each dependent from one or another of the independent claims discussed above and are therefore believed patentable for at least the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual reconsideration of the patentability of each on its own merits is respectfully requested.

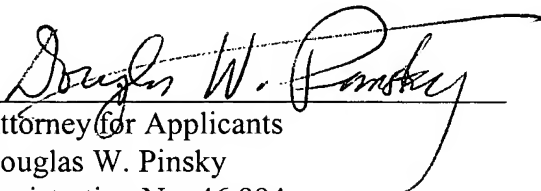
Applicants submit that this Amendment After Final Rejection clearly places the subject application in condition for allowance. This Amendment was not presented earlier, because Applicants believed that the prior Amendment placed the subject application in

condition for allowance. Accordingly, entry of the instant Amendment, as an earnest attempt to advance prosecution and reduce the number of issues, is requested under 37 C.F.R. § 1.116.

In view of the foregoing amendments and remarks, Applicants respectfully request favorable reconsideration and early passage to issue of the present application.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,



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